

$$\textcircled{5} \int 5 \cos x \, dx$$

$$= 5 \sin x + c$$

$$b) \int -\frac{2}{3} \sin x \, dx$$

$$= -\frac{2}{3} - \cos x + c$$

$$= \frac{2}{3} \cos x + c$$

$$c) \int_3^4 (x-2)^4 \, dx$$

$$= \left[\frac{(x-2)^5}{5 \times 1} \right]_3^4$$

$$\frac{(4-2)^5}{5} - \frac{(3-2)^5}{5 \times 1}$$

$$\frac{2^5}{5} - \frac{1^5}{5}$$

$$\frac{32}{5} - \frac{1}{5} = \frac{31}{5} = 6 \frac{1}{5}$$

Outcome 3

$$6a \log_a 8 + \log_a 5$$

$$= \log_a (8 \times 5)$$

$$= \log_a 40$$

$$b. 5 \log_4 2 - \log_4 8$$

$$= \log_4 2^5 - \log_4 8$$

$$= \log_4 32 - \log_4 8$$

$$= \log_4 \left(\frac{32}{8} \right)$$

$$= \log_4 4$$

$$= 1$$

$$7a \text{ If } x = \frac{\log_e 13}{\log_e 5}$$

$$=$$

$$b) \log_{10} y = 2.6$$

$$y = 10^{2.6}$$

$$c) y = 10^{3.4}$$

$$= 2.511 886 432$$

Outcome 4

$$3 \cos x + 2 \sin x \quad k \cos(x-\alpha)$$

$$\text{use } k \cos(x-\alpha)$$

$$= k \cos x \cos \alpha + k \sin x \sin \alpha$$

$$k \cos \alpha = 3$$

$$k \sin \alpha = 2$$

$$k = \sqrt{3^2 + 2^2}$$

$$= \sqrt{9 + 4}$$

$$= \sqrt{13}$$

$$\tan \alpha = \frac{\sin}{\cos} = \frac{2}{3}$$

$$\alpha =$$

$$\begin{array}{c|c} \checkmark S & \checkmark A \\ \hline T & C \checkmark \end{array}$$

$$3 \cos x + 2 \sin x = \sqrt{13} \cos(x -$$